commercial, to justify a renewal of Antarctic research; and I feel assured that nothing could bring to us greater distinction in the eyes of the whole civilized world than such an expedition, judiciously planned, and skilfully carried out.

THE USE OF OIL.

MASTERS of vessels cannot be reminded too often of the use of oil in stormy weather. Its importance is well illustrated by the fact that it is now referred to at length in standard books on seamanship; and the International Marine Conference at Washington recommended that "the several governments require all their sea-going vessels to carry a sufficient quantity of animal or vegetable oil for the purpose of calming the sea in rough weather, together with suitable means for applying it." As a good example of the directions that are now given for the best way to use oil, the remarks in a recently published book on practical seamanship, by Todd and Whall, printed on the "Atlantic Pilot Chart" for October, are of interest:—

"To cross a bar in heavy weather, after battening down all hatches, etc., take two pieces of India-rubber pipe about twenty feet long and one inch in diameter. Put these through the hawse-pipes, one on each side, and let their ends trail in the sea. On the upper end of each piece of tube lash a good-sized funnel, secure it to a stanchion in a vertical position, and station a man at each, with a three-gallon tin of colza-oil. When the vessel enters the outermost sea that breaks on the bar, let each man gently pour the oil down the pipes. This will smooth the bar immensely, and the vessel will steer much better. Almost any oil of animal or vegetable origin will do; but petroleum is not of much service, excepting to mix with and thin the other, if necessary. When lying-to in a gale, head to wind and drifting slowly, if a little oil is used, a ship ought to pull through the heaviest storm. Running in a gale, an oil-bag hung over the weather-side, or oil poured down a pipe well forward, is of great service in preventing the sea from breaking aboard; gale increasing, to round-to, prepare a sea anchor, watch for a smooth spell, and then put the helm down, heave overboard a few gallons of oil, and float the sea-anchor. Keep pouring the oil on the sea down a weather pipe or scupper while the ship is coming up to the wind. A well-equipped sailing-ship, even if deeply laden, will lie-to under a closely reefed topsail or tarpaulin in the rigging, and weather almost any gale, so long as she is not taken aback. Sailing-vessels under these circumstances nowadays often use an oil-bag paid out to windward to smooth the sea still more: this is the ideal position of a laden vessel in a dangerous storm. Whilst towing a disabled ship over a bar, or where the sea is very wicked, a couple of oil-bags over the stern will ease the sea on the tow. In a good steamer, to take a shipwrecked crew off a wreck, run to windward of the wreck, lower the lee boat, put your vessel head to sea and dead to windward, and let the boat drop down toward the wreck, veering out on the line, and constantly pouring considerable oil into the sea, which will keep the sea smooth between your ship and the wreck. In using oil-bags in heavy weather, they should be weighted, if hung over the side, in order to keep them down. When scudding, it is best to pour the oil down the closet-pipes."

NOTES AND NEWS.

WE learn from *Nature* that an expedition to Greenland will start from Denmark next year, under the command of Lieut. Ryder, to investigate the east coast between latitude 66° and 73°.

—At a meeting of the Royal Geographical Society of Australasia, held at Melbourne on Aug. 22, a letter from Sir Thomas Elder was read, in which he offered to bear the entire cost of an expedition to the unexplored regions of Australia. A report on the question of antarctic exploration was also submitted to the meeting. In this report, according to *Nature* of Oct. 9, it was stated that public interest in the subject had been revived by the announcement that Baron A. E. Nordenskiöld, after a conference with his friend Baron Oscar Dickson, had consented to take the command of an expedition to the south-polar regions, on the condition that the Australian colonies contributed a sum of $25,000 towards the expenses. Baron Dickson having offered to advance the other moiety, or whatever more might be necessary. "The offers were cordially accepted, and the antarctic committee felt itself justified in making the necessary arrangements without delay for collecting the amount to be contributed by the Australasian colonies. The council of the society had passed resolutions recognizing a national duty in the exploration of the antarctic regions, especially that portion lying opposite to Australasia, pledging itself to use its influence in promoting the enterprise, and giving authority to head a subscription list in aid of the Swedish Australian Exploration Fund with a donation of $1,000 from the society's funds. It would appear, from the hearty reception accorded to the proposals of the antarctic committee, that the latter might rely upon the energetic co-operation of all the scientific societies of Australasia, and thus be enabled to collect the amount of the contribution promised towards defraying the expenses of the combined Swedish and Australian Exploring Expedition to the South Polar Regions." The report, on being put to the meeting, was "received with acclamation."

—Mr. Robert Swordy of Dryburn Cottage, Durham, in a letter to *Nature*, the substance of which was printed in that journal for Oct. 9, gives an account of a toad (*Bufo vulgaris*) which he saw crawling out of the Pond Wood at Aykleyheads. The muscles of the toad's body were (as usual) arranged in such a fashion that the back of the toad looked like minute nodules of dark gravel embedded in a damp path below trees; but what seemed to Mr. Swordy most remarkable was, that on the top of this gravel-like arrangement of muscles there was spread a mesh or network of very fine lichen, with oval-shaped leaves of a lightish-green color, connected more or less to each other by a hair-like process of stems. This lichen spread irregularly over the toad's back, and odd sprays of it were also to be seen on the legs and upper surfaces of the feet. "Now," says the writer, "had the toad been in its regular haunts under the trees and shrubs, with this wonderful counterfeit of gravel and protective coloring, it would have been almost impossible to discriminate its form from the dark gravel, lichens, moss, wood-sorrel, and dead leaves of the place; and I doubt not that this animal's unobtrusive attire would aid it materially in capturing the insects necessary for its sustenance." Mr. Swordy enclosed photographs of the toad sitting on a section of lichen-colored gravel path, taken from near the spot where he found it.

—The following newspaper anecdote will interest those fond of animals: "A friend of the writer owns a monkey, which answers to the name of 'Jocko.' The children of the house and Jocko are boon companions, and of a summer afternoon enjoy a frolic together upon the lawn. One day some one threw a match down, and the grass ignited, making a little blaze. Jocko saw it, stopped and looked, then glanced all around, and, seeing a piece of plank not far off, ran for it, crept cautiously to the fire, all the time holding the plank as a shield between himself and the flame, then threw the plank on the fire and pressed it down and extinguished it. What child could have reasoned better and done more? Although, perhaps, no danger could have come from the fire, still, no one knows what the result might have been, and the monkey evidently believed that prudence is the better part of valor."

—The students' work in psychology at the University of Toronto, as reported by Professor J. Mark Baldwin in the last number of *The American Journal of Psychology*, has been hitherto general and theoretical. The new curriculum, however, as now ratified by the university senate, provides for more special and advanced courses, and opportunity for research. The recent fire in University College postponed the equipment of the psychological laboratory, but in the plans for the new buildings more ample accommodations are secured. The new laboratory is to be in the restored building in a retired portion of the first floor immediately over the rooms of the physical department. It will comprise two communicating working rooms, each 16 by 21 feet; a professor's private room, to be used also as a special psychological library under charge of a fellow or instructor; and a dark room available

from the resources of the physical laboratory. The first two rooms will be separated by a hall from the latter two. The equipment, apparatus, etc., may be delayed in consequence of the present severe tax upon the resources of the university, but special researches will be prosecuted with the aid of adapted apparatus kindly loaned from the very complete collections of the departments of physics and biology. The design is to encourage serious endeavor and stimulate interest in the outlying questions of the sciences, principally among post-graduates. Private facilities will be given whenever possible for experiments in psychometry and psychophysics. It is hoped that the work may be expanded to include problems in medical and abnormal psychology, since the city and provincial institutions present abundant facilities; but nothing in this line has been projected as yet. During the past year the students of the department have formed a psychological society for discussion and presentation of papers, conducted entirely by themselves. The object of the society is breadth of information rather than new work. They treat psychological questions, however, quite apart from speculative philosophy. The library was totally destroyed by the fire; but the new collection is growing rapidly, especially in this department, owing to the notable generosity of friends at home and abroad. In another year it will probably be more complete in psychological publications than before. The teaching force is at present Professor J. Mark Baldwin and a fellow. After next year Professor J. G. Hume is to assume his duties, and a post-graduate scholarship in philosophy is to be established in memory of the late Professor Young. Thus four, at least, will be the official in charge. The following are the subjects of researches now in progress: "Beginnings of Voluntary Movement in Childhood," "Sense of Effort," "Recognition," together with special topics for Professor Baldwin's proposed volume on "Feeling and Will."

—Following the appropriation and authority of Congress for its action, the Mississippi River Commission, after about a year of suspended business, held its first meeting of the present fiscal year at the Army Building in New York City, at which all the members of the board were present, beginning on the morning of Oct. 1, and continuing until the afternoon of the 4th. The first days of the session were given to the public hearing of parties interested in the protection and improvement of the Mississippi River, represented by the State engineers, and organized bodies of citizens, mainly from the lower sections of the river, together with a more general discussion by other parties of the commercial and economic questions relating to the entire valley. The latter part of the time was given, in private session, to the direct business of the commission, in allotting the appropriation made by Congress —three million two hundred thousand dollars—to the various works of protection and improvement on the river. Since the first organization of the commission, some changes have taken place in its *personnel*, and it now consists of the following members: Col. Cyrus B. Comstock, Corps of Engineers, president (Army Building, New York City); Lieut. Col. Charles R. Suter, Corps of Engineers, U.S.A. (St. Louis, Mo.); B. M. Harrod, civil engineer (New Orleans, La.); Hon. Robert S. Taylor (Fort Wayne, Ind.); Major Oswald H. Ernst, Corps of Engineers, U.S.A. (War Department, Washington, D.C.); Henry Flad, civil engineer (St. Louis, Mo.); Professor Henry L. Whiting (U. S. Coast and Geodetic Survey, Washington, D.C.); Capt. Carl F. Palfrey, Corps of Engineers, U.S.A., secretary of the commission (with main office at St. Louis, Mo.). The next meeting is to be held on board the government steamer "Mississippi" at St. Louis, whence the commissioners will proceed on an inspection of the river, and the parties carrying on the various works along its course between Cairo and the Head of the Passes.

—A valuable contribution to the subject of atmospheric electricity has been lately made by Professor L. Weber, who, in experiments at Breslau, used a sensitive, earth-connected galvanometer, instead of the electroscope in Exner's method, as we learn from *Nature* of Oct. 9. Using Exner's metallic rod and flame, he found that the currents were extremely small, about a micro-milliampère (or the thousand-millionth part of an ampère). They were increased with a longer rod and bigger flame; but much better results were got with a kite or captive balloon. The edge of the kite was coated with silver paper, and the tail was formed with tassels of the paper. A line of fine steel wire was used, and about twelve feet at the upper end were of non-conducting string. Experiments were made on twelve cloudless days. Taking the intensities of current as ordinates, and the heights to which the kite (or balloon) rose as abscissæ, the curve of intensity had its convex side to the axis of abscissæ. On but few days was the current negative, this effect being probably due, the author thinks, to dust charged with negative electricity which it gave to the line. This might neutralize some of the positive electricity set flowing in the wire by the earth's induction. Professor Weber considers that any experiments on the earth's surface with short conductors can at best give relative values, and determine periodical changes. His values differ not inconsiderably from Exner's. At a height of 350 metres (1,166 feet) the potential was found to be 96,400 volts; and, assuming a regular increase of potential with height, the fall of potential would here be 275 volts. The potential of the earth is estimated at the enormous value of $1{,}720 \cdot 10^6$ volts. Supposing the volt to be about the electro-motive force of a Daniell element, a huge battery of this number of elements would be needed to produce the earth's potential; the zinc pole being connected with earth, and the copper led into space. Professor Weber considers the question of possible electric repulsion from the earth, and is led to some instructive remarks on rain-particles, clouds, etc. Some very interesting effects were obtained from thunder-clouds; but for these and other matters we would refer the reader to the original (an account of these researches appears in *Humboldt* for September).

—Naturalists will read with interest a paper in *Humboldt* for September, in which Professor Forel of Zürich gives the results of a visit he paid to Tunis and eastern Algeria, chiefly to observe the ants there. Looking from a ship at the dreary gray wastes, and the large date-palm oasis of Gabes, according to *Nature*, one fancies all animal life must be concentrated under the palms. But really there is very little of it there, and hardly any thing singular; while the sand of the desert contains, round each of the poor, small, sparse plants, a host of beetles and other insects, many of them with striking adaptations and peculiarities. Some live on excrement of camels, asses, etc.; some on the plants; and some prey on other animals, big and small. In one ant-hill he found that several ants had a small brown object clinging to the lower part of an antenna; in some cases, one on either antenna. On examination, this fell off, and was found to be a small beetle, which evidently clings there as guest. It has tufts of hair, which are probably licked by the ant. The host did not seem to trouble itself about this little creature, which, by its odd post, is enabled to accompany the ant in its wanderings and changes of abode. Professor Forel remarks on the peaceful character of the ants in that region. With few exceptions they avoid fighting, and only one ant was found capable of piercing the human skin.

— The phenomenon of globular lightning was imitated by M. Planté, it will be remembered, with his secondary batteries. It has been shown by Herr von Lepel, as we learn from *Nature* of Oct. 16, that this can also be done with so-called statical electricity, obtained from an influence machine. Two thin brass-wire points from the poles of a powerful machine being held at a certain distance from the opposite sides of an insulated plate of mica, ebonite, glass, or the like, there appear small red luminous balls, which move about, now quickly, now slowly, and are sometimes still. Even better effects were had with a glass or paper disk which had been sprayed with paraffine. Small particles of liquid or dust seem to be the carriers of the light. A slight air-current makes the spherules disappear with hissing noise. These spherules, the author remarks, are phenomena of weak tension: an increase of the tension gives a rose spark-discharge. Various interesting analogies with globular lightning are traced.

—In *Science* of last week, p. 248, first column, 20th line, "efferent sensations" should read "afferent sensations;" 21st line, "Memories of movements" should read "Memories of movement;" 22d line, "afferent feeling" should read "efferent feeling."